REMARKS

This is a full and timely response to the outstanding Final Office Action mailed Sep. 14, 2004. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

1. Present Status of the Application

Upon entry of the amendments in this response, claims 78-83, 85 and 87-91 remain pending in the present application. More specifically, claims 78 and 85 are directly amended and claims 84 and 86 are canceled. These amendments are specifically described above. It is believed that the foregoing amendments add no new matter to the present application.

2. Response To Rejections

As currently amended, independent claim 78 recites:

78. A bonding structure positioned on a pad of a chip, wherein the bonding structure is adapted to be bonded on a pad of a substrate, the substrate has a patterned solder mask, and the patterned solder mask layer has at least one opening that exposes the pad of the substrate, the bonding structure comprising:

a conductive pillar positioned over the pad of the chip; and

a solder cap positioned over the conductive pillar, wherein ***the solder cap has a largest transverse dimension smaller than the transverse dimension of the opening in the patterned solder mask, and the largest transverse dimension of the solder cap is smaller than a transverse dimension of the conductive pillar, wherein the solder cap is formed over the conductive pillar before the solder cap is bonded to the pad of the substrate.***

(emphasis added)

The present invention as defined in claim 78 specifies that the solder cap has a largest transverse dimension smaller than the transverse dimension of the conductive pillar. Carey does not teach or suggest such a feature.

The present invention in claim 78 discloses the relationship between the bonding structure positioned on a chip and an opening in a patterned solder mask on a substrate. The solder cap has a largest transverse dimension smaller than the transverse dimension of the opening in the patterned solder mask. Moreover, the present invention in claim 78 discloses *the relationship between the conductive pillar and the solder cap*. *The largest transverse dimension of the solder cap is smaller than the transverse dimension of the conductive pillar, which is not taught by Carey.* As a result, withdrawal of the rejection is respectfully requested.

As currently amended, independent claim 85 recites below:

85. A bonding structure, comprising:
a conductive pillar positioned over a pad of a chip, wherein ***the conductive pillar comprises copper***; and
a solder cap positioned over the conductive pillar, wherein ***the solder cap has a largest transverse dimension smaller than a transverse dimension of the conductive pillar***.

(emphasis added)

Applicant respectfully asserts that the method claimed in claim 85 of the present invention patentably distinguishes over Carey's structure.

The present invention in claim 85 discloses that a bonding structure comprises a conductive pillar and a solder cap. *The solder cap has a largest transverse dimension smaller*

than a transverse dimension of the conductive pillar, which is not taught by Carey. As a result, withdrawal of these rejections is respectfully requested.

For at least the foregoing reasons, Applicant respectfully submits that independent claims 78 and 85 patently define over the prior art references, and should be allowed. For at least the same reasons, dependent claims 79-83 and 87-91 patently define over the prior art as well.

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CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 78-83, 85 and 87-91 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

Respectfully submitted,
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